

ELEXION

**P455 'On-Site Aggregation as a method to
facilitate Third Party Access'**

Meeting 2

31 October 2023

Meeting Agenda

Objectives for this meeting:

- Objective 1: present the revised Terms of Reference (ToR)
- Objective 2: discuss ToR a), b), c), e) and g)

Agenda Item	Lead
1. Welcome and meeting objectives	Ivar Macsween (Elexon) – Chair
2. Updates to terms of reference	Reg Platt (Emergent) - Proposer
2. Validating settlement outcomes from the Solution	Reg Platt (Emergent) - Proposer
3. Design specifics of the solution, including: testing requirements, with insights from Emergent’s Sandbox trial, and Meter Agents requirements	Reg Platt and Christopher Day (Elexon) – Market Design
4. Updates on data needs, and links to DCUSA	Reg Platt
5. P455 Next Steps	Cecilia Portabales (Elexon) – Lead Analyst
6. Meeting close	Ivar Macsween



UPDATED TERMS OF REFERENCE

Previous Specific ToRs and solution design details side by side



ToR	Details
a)	Does the proposed on-site aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)?
b)	Should the proposed on-site aggregation methodology be required to conduct unmetered load tests?
c)	Is it right that the boundary meter HHDC and HHMOA are responsible for operations related to the sub-meters, given private network operators are responsible for these meters on a day to day basis?
d)	Is it right that the sub-meters should conform to COP10 standards?
e)	Should there be a requirement for Elexon to maintain a central database of sites where on-site aggregation is applied? Do the benefits of maintaining a central register outweigh the costs of creating and maintaining his central register?
f)	Is there an impact on BSC Metering Dispensations?
g)	Is this proposal independent from any DCUSA change?
h)	Is a Cost-Benefit Analysis required?

Solution Design details

- Solution limited to use in schemes under 100kW capacity (larger schemes must use difference metering)
- Sub-metering to conform to CoP 10 standards
- Responsibility for integrity of sub-meter data and operations to sit with the HHDC/DAs and HHMOAs appointed to the PN Boundary Point Settlement meters (albeit PN operators are expected to play a role in the delivery of these responsibilities as part of their day-to-day activities)
- A complex site validation test must be undertaken for each scheme
- An unmetered loads test should not be required (as was the case for the Sandbox scheme)
- The MSIDs of Customers of a PN should be de-energised instead of logically disconnected, in order to minimise barriers to the Customer subsequently choosing a third-party supply

Updates to specific ToRs (integrating all key design elements) and relation to today's agenda



ToR	Description	Plan
a)	Does the proposed on-site aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)?	Goal is to resolve this today
b) edited	What testing should be required to validate the solution is correctly implemented, and should this include an unmetered load tests?	Goal is to resolve this today
c) edited	Is it right that the boundary meter HHDC and HHMOA are responsible for operations related to the sub-meters, given private network operators are responsible for these meters on a day-to-day basis, and given the move to new arrangements under MHHS?	Goal is to resolve this today
d)	Is it right that the sub-meters should conform to COP10 standards?	Out of scope today
e) edited	Should there be a requirement for Elexon to maintain a central database of sites where on-site aggregation is applied? Do the benefits of maintaining a central register outweigh the costs of creating and maintaining his central register? Do PNOs/DNOs have all the necessary data to manage schemes?	Updates to discuss
f)	Is there an impact on BSC Metering Dispensations?	Out of scope today
g)	Is this proposal independent from any DCUSA change?	Updates to discuss
h)	Is a Cost-Benefit Analysis required?	Out of scope today
i) added	Is it right that the scheme is limited to sub-100kW sites?	Out of scope today
j) added	Is it right that the MSIDs of Customers of a PN should be de-energised instead of logically disconnected, in order to minimise barriers to the Customer subsequently choosing a third party supply? Are there other ways in which the need to swap customers meters when they move in and out of schemes could be reduced/avoided?	Out of scope today
k) added	Is it right for the solution not to be captured under the complex site arrangements within BSC?	Out of scope today
l) added	Is a physical boundary meter required to implement the solution, and should it be?	Out of scope today
m) added	What are the arguments for and against creation of a new market role for PNOs (e.g. access to industry data access; market competition)?	Out of scope today

Today's agenda for discussion of ToR

1. ToR a: Does the proposed on-site aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)?
2. ToR b: What testing should be required to validate the solution is correctly implemented, and should this include an unmetered load tests?
3. ToR c: Is it right that the boundary meter HHDC and HHMOA are responsible for operations related to the sub-meters, given private network operators are responsible for these meters on a day-to-day basis, and given the move to new arrangements under MHHS?

Updates on:

4. ToR e: Should there be a requirement for Elexon to maintain a central database of sites where on-site aggregation is applied? Do the benefits of maintaining a central register outweigh the costs of creating and maintaining his central register? Do PNOs/DNOs have all the necessary data to manage schemes?
5. ToR g: Is this proposal independent from any DCUSA change?



TOR A:
DOES THE PROPOSED
ON-SITE AGGREGATION
METHODOLOGY RESULT
IN ACCURATE
SETTLEMENT OUTCOMES
(PARTICULARLY IN
RELATION TO
DIFFERENCE
METERING)?

Specific ToR a): Does the proposed on-site aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)?



Why particularly in relation to difference metering?

- The central purpose of P455 is to deliver accurate settlement outcomes from PNOs with third party supply, without having to involve 3rd party supplied customers of their supplier/s (and associated agents).
- This requires 3rd party supplied customers to retain their existing settlement (MPAN) meter, which is similarly the case with difference metering.

Existing option	Description	Relevance to core purpose of P455
Difference metering	<ul style="list-style-type: none"> • Metered loads from 3rd party supplied Customers are netted against Boundary meter loads by a single HHDC 	Involves settlement of volumes incorporating volumes from settlement (i.e. MPAN) meters installed for 3 rd party supplied Customer 'behind' the settlement meter at the boundary to a PNO
Shared metering	<ul style="list-style-type: none"> • Boundary meter supplier and 3rd party supplier/s agree to apportion boundary meter loads based on an allocation schedule 	Allocation schedule can be based on metered data from private network loads, but all loads including 3 rd party supplied Customers must be metered using non-settlement meters.
Feed-through metering	<ul style="list-style-type: none"> • Exports from private network to third party supplied Customers metered via dedicated private network meters 	Discounted because requires installation of additional/secondary non-settlement meters for 3 rd party supplied customers/loads, which PNOs are commercially disincentivised to do
Full settlement metering	<ul style="list-style-type: none"> • All Customers on a private network opt for 3rd party supply 	Discounted because prevents customers from using on-site renewables

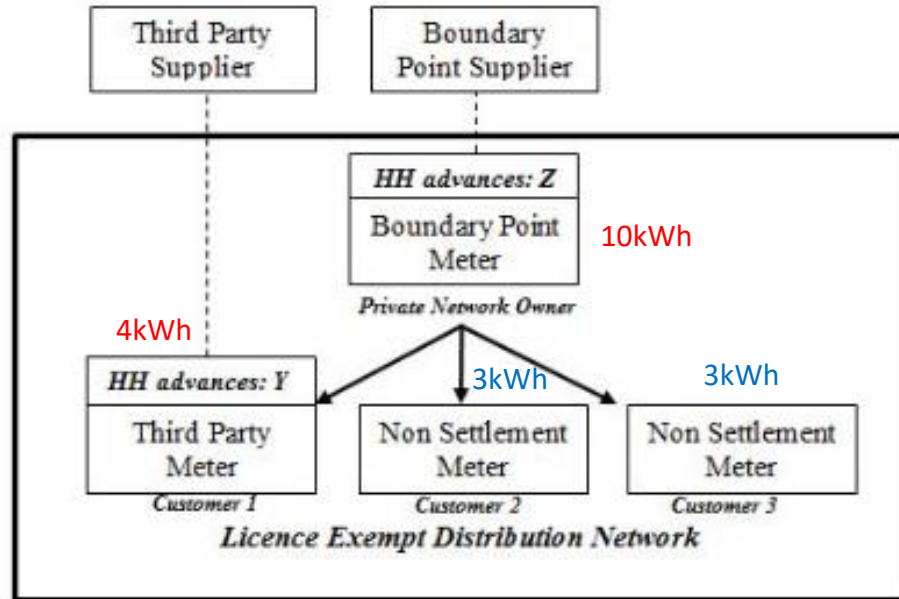
Specific ToR a): Does the proposed on-site aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)?



Difference metering accuracy requirements, from BSCP502, 4.9: Guide to complex sites:

- A 'Complex Site' means; any site that requires a 'Complex Site Supplementary Information Form' to enable the HHDC to interpret the standing and dynamic Metered Data relating to SVA MSs for Settlement purposes
- Appendix 4.9.1 to 4.9.8 provides a non-exhaustive list of Examples of Complex Sites and non-Complex Sites. These examples illustrate the need to create rules that accurately describe the aggregation necessary to derive the total energy for a customer. The aggregation rule contains terms that define each metered quantity at each Meter Point and form part of the total energy.
- The HHDC is required to establish gross energy for the site for each Settlement Period. This is achieved by applying the aggregation rule to the metered data values. If the resultant value applied to the rule is positive, the site is Exporting, and the Import value is zero. Conversely, if the result is negative, then the site is Importing, and the Export value is zero. Where the resultant is zero, the site is neither importing nor exporting and both values shall be zero.

Re ToR a):
BSCP502 Difference metering example 1 with
imports only, Vs P455 outcomes



Goal is to calculate the Private Network Owner settlement volume in any half hour (nb. Third Party Customer volumes are submitted direct to settlement)

Difference metering method:

PNO settlement volume = Z (10kWh) – Y (4kWh), i.e. 6kWh

NB Customer 2 & 3 volumes are invisible to settlement/industry

P455 Aggregation methodology:

Excluding any potential losses (tackled later)

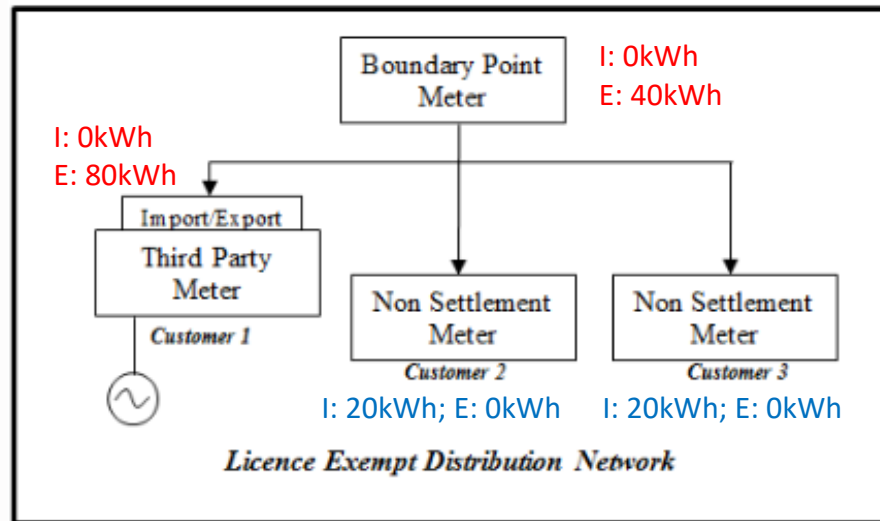
We know that the PNO settlement volume = $Z - Y$

And that $Z - Y$ must = Cust. 2 + Cust. 3 volumes

Therefore PNO settlement volume also = Cust. 2 + Cust. 3 volumes

i.e. PNO volume = C2 (3kWh) + C3 (3kWh) = 6kWh

Re ToR a):
BSCP502 Difference metering example 2 including
exports, Vs P455 outcomes



Scenario is not that useful as it sees all generation used on site, and the third-party customer being the source of generation
Nonetheless, the maths works fine.

Remember only Boundary point meter and third-party meter are visible to settlement/industry

Difference metering method:

PNO settlement volume = (Boundary point meter Export – Import) –
(Third party meter Export – Import)
+ve result = export; -ve result = import

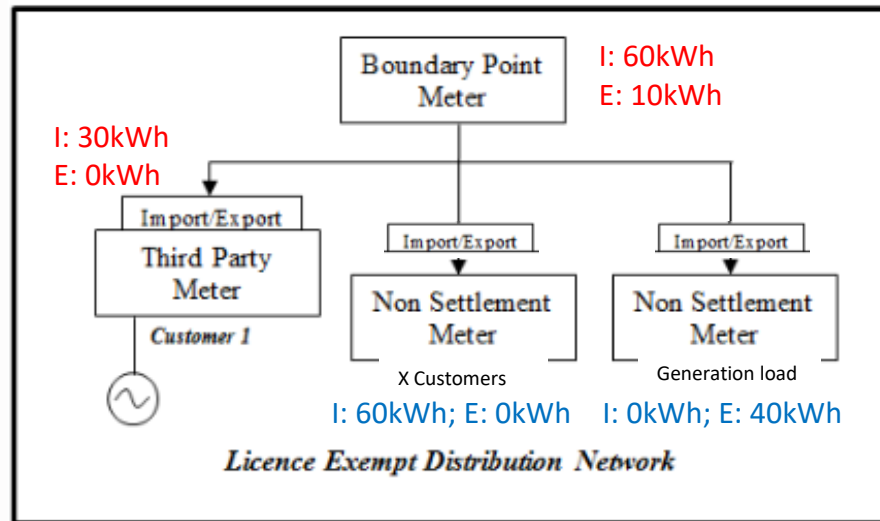
i.e. PNO sv = $(40-0) - (80-0) = -40$. i.e. 40kWh import

P455 method:

PNO sv = all export loads - all import loads
+ve result = export; -ve result = import

i.e. PNO sv = $(0+0) - (20+20) = -40$. i.e. 40kWh import

Re ToR a): Realistic difference metering examples including imports and exports, Vs P455 outcomes



Difference metering method:

PNO settlement volume = (Boundary point meter Export – Import) – (Third party meter Export – Import)
+ve result = export; -ve result = import

i.e. PNO sv = $(10 - 60) - (0 - 30) = -20$. i.e. 20kWh import

P455 method:

PNO sv = all export loads - all import loads
+ve result = export; -ve result = import

i.e. PNO sv = $(0 + 40) - (60 + 0) = -20$. i.e. 20kWh import

Note: – other numbers for the sub-meter loads deliver the same result.
The difference is only relevant for the PNO and not settlement/industry

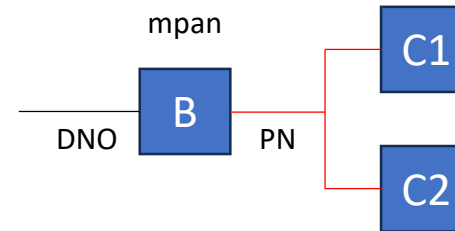
e.g. PNO sv = $(0 + 60) - (60 + 20) = -20$. i.e. 20kWh import

Re ToR a): Accounting for distribution losses on PNs



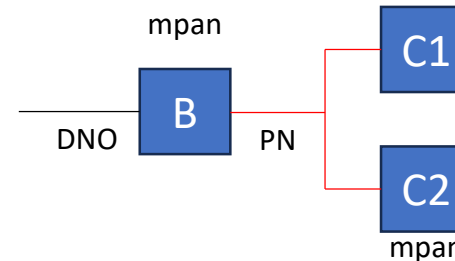
Shared metering

When using sub metering the allocation schedule formula accounts for the losses.



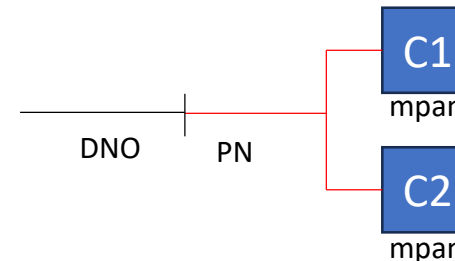
Difference metering

Necessitates a need to account for the electrical losses on the private network between the Third Party Meter/s and the Boundary Point Meter/s. This is so the Boundary Point Supplier is not left with the responsibility for the losses within the private network. Can be done via the Complex Site Rule or dynamically within the Meters themselves



Full settlement

Because these sites are treated in the same way as, any other site connected to the Total System they are subject to the normal LDSO UoS charges. There are no special arrangements for Third Party Access and the losses within the private network are considered by the LDSO as part of their network.



Re ToR a): Accounting for distribution losses on PNs

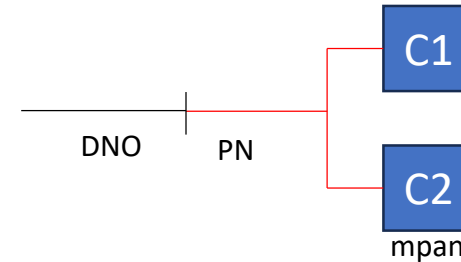


Aggregated metering

As with full settlement, all entry and exits points are metered.

Absence of measurement of losses incurred on the PN results in the same outcomes as the status quo arrangement for all associated distribution systems (including non-licensed BNOs in flats).

Note: in the example to the right, C1 can be considered to be the result of the aggregation methodology, and include a number of generation and demand loads.



Specific ToR a): Does the proposed on-site aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)?



Any questions?

Can we resolve this ToR?

If not, what do we need to address?



TOR B:
WHAT TESTING SHOULD
BE REQUIRED TO
VALIDATE THE SOLUTION
IS CORRECTLY
IMPLEMENTED, AND
SHOULD THIS INCLUDE
AN UNMETERED LOAD
TESTS?

Specific ToR b): What testing should be required to validate the solution is correctly implemented, and should this include an unmetered load tests?

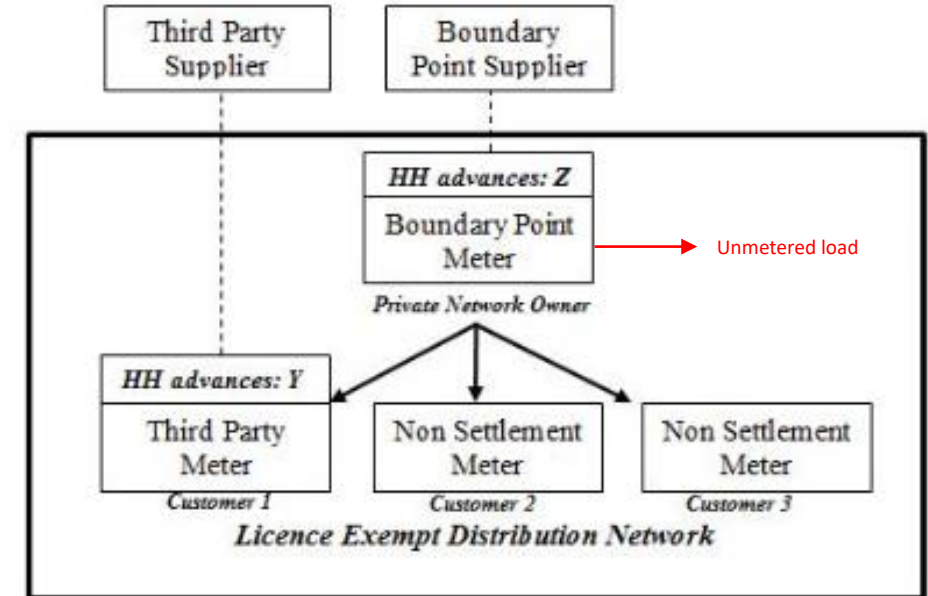


While the basic maths of P455 is simple, losses from unmetered loads could introduce inaccuracies in the boundary meter volumes submitted to settlement.

A requirement of Emergent's Sandbox was to conduct a so-called 'proving test' that would check for such losses, prior to a site being permitted to go live with P455.

Based on our experience running these tests for the Sandbox, we strongly believe they are both unviable and unnecessary, and should therefore not be an enduring requirement for P455.

We believe instead that existing industry testing arrangements for comparable arrangements are sufficient for P455 and should be applied.



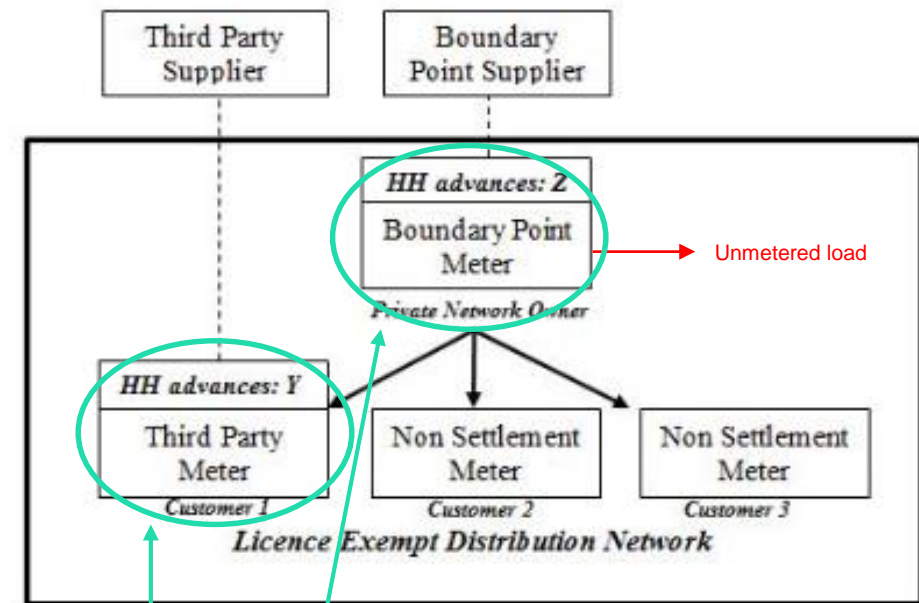
TESTING REQUIREMENTS FOR ON SITE AGGREGATION

Testing Requirements for current Third Party Access options

- The current options to facilitate Third Party Access are:
 - Full Settlement Solution
 - Shared SVA Metering System (as per BSCP550)
 - Difference Metering (Complex Site)
- Under the Full Settlement Solution all entry and exits points on a License Exempt Network are captured by independent Metering Systems. There is no interaction between the Metering Systems and so there is no requirement for an extra assurance test over and above those required for single Metering Systems.
- Shared SVA Metering Systems have certain controls that ensure the integrity of Settlement is protected. The HHDC must ensure that the Allocation Schedule allocated 100% of energy consumed/produced, as measured at the boundary meter, between all Suppliers involved. If an Allocation Schedule is not received by Gate Closure then 100% of energy produced is allocated to the Primary Supplier.
- Metering Systems involved in a Complex Site are subject to a Complex Site Validation Test.

Complex Site Validation Test

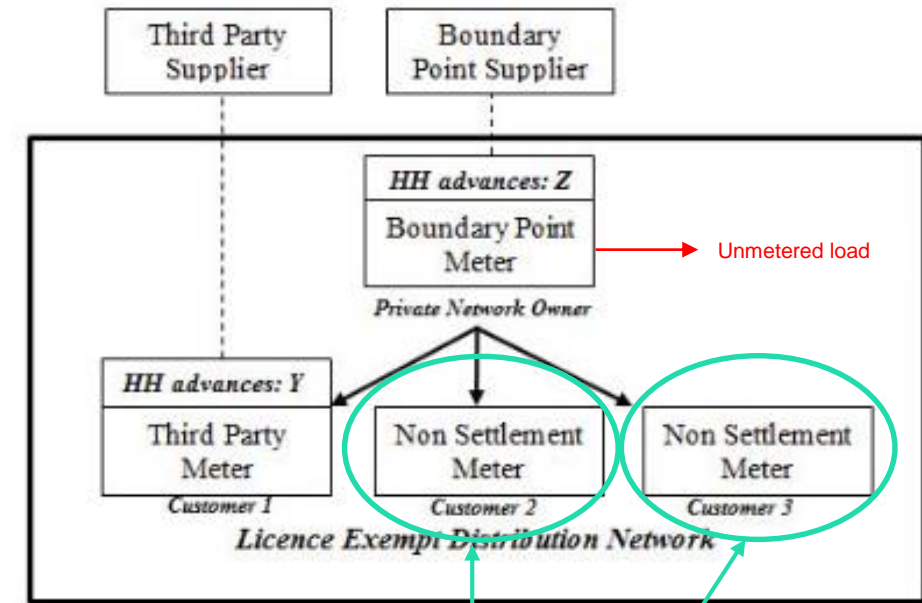
- A Complex Site Validation Test is a type of Proving Test that ensures that the HHMOA and HHDC calculate the same output when applying a Complex Site Rule. Both agents must retrieve data from each independent Meter within the Complex Site rule and apply that data via the Complex Site rule to calculate the final Settlement value. The output from both HHMOA and HHDC is then compared to ensure there is no inconsistencies between the application of the Complex Site Rule between agents.
- The same HHMOA and HHDC has to be appointed to all Metering Systems within the Complex Site meaning there are no issues of access to the Metering Systems involved.
- There are no obligations that require any participant involved in the Complex site to access or obtain data from the Non-Settlement Meters.
- Due to the nature of the Complex Site rule any unmetered connections on the Private Network would be captured in Settlement (i.e. applied to the PNO settlement meter volumes) but allocated incorrectly.



Meters included
in complex site
rule and proving
test

On Site Aggregation

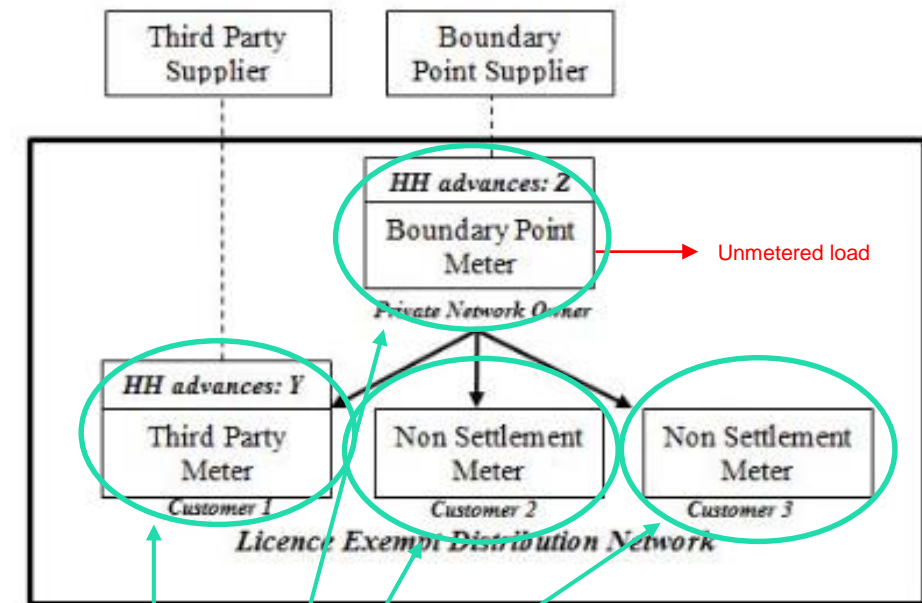
- Under the proposed On Site Aggregation Method, the Aggregation Rule would be the sum of the Non-Settlement Meters.
- Therefore the direct equivalent of a Complex Site Validation Test would be for the HHMOA and HHDC to retrieve data from each non-Settlement Meter and aggregate them. Both outputs would then be compared.
- However under the On Site Aggregation Method any unmetered or unregistered loads would not be captured in Settlement.



Meters required for
a test that is the
direct equivalent of
a Complex Site
Validation Test

On Site Aggregation

- Therefore under Emergent's Sandbox trial Elexon required an "unmetered loads" test to take place. This involved obtaining HH data from all Metering Systems located on the License Exempt Network and comparing the aggregate of these Metering System to the Boundary Point Meter reading for the same HH.
- This ensured there was no connection on the License Exempt Network that was not accounted for in Settlement.
- This test does require the participants involved in the On Site Aggregated Metering Systems to access and obtain readings from Metering Systems they are not directly involved in.



Meters / loads required to be included for Emergent's Sandbox trials

Specific ToR b): Revisiting Elexon's principles and requirements and for the Sandbox test



- Elexon provided a guidance document on how to do the tests – shown right.
The document was not final. It covers sites where all on-site metering is accessible but when it was provided, it was acknowledged that sites where on-site metering isn't accessible are much harder to cater for and needed something different. Details of alternative testing arrangements were meant to follow but didn't. In practise, the same margin of error requirements as the document stated would be required for sites with accessible meters. applied to sites without accessible meters.

Key extracts:

- **The test has been formulated to be proportionate** to the risk that errors on the sites pose to settlement overall
- The requirements ... need to consider that **the BSC Party responsible for the site's boundary meter does not have any rights to access the meters of customers Supplied by Third Party Suppliers. Nor should they interrupt the Supply of electricity to these customers (or their own) for the purposes of the test.**
- During the application process we agreed that **the use of non-contact current measuring devices (i.e. current clamps or tongs) would be appropriate** for measuring the consumption of customers with Third Party Supplies.
- For sites where all on-site metering is accessible, **the allowable margin of error for readings must take into account CoP10 metering allowable variances** [i.e. a margin of error determined by industry standard allowances for meter data errors].

On-site metering not accessible

Where on-site metering is not accessible, the testing organisation will need to take readings from feeder cables to the meters, and be able to demonstrate that all of these feeders terminate at a meter. Details of testing will follow in an update to this document.

ELEXON

Proving test for sites operating under Derogation ERS/001

Date	01 Oct 2021	Classification	Public
Document owner	Peter Frampton	Document version	1.0

1. Introduction

The derogation to the BSC ERS/001 granted 26 May 2021 enables the BSC Party who is the registrant of the boundary meters for specified sites (facilitated by Emergent Energy) to submit an aggregation of metered volumes for their customers on the site in lieu of the site boundary meter reading. The purpose of the derogation is, amongst other things, to test the accuracy of the aggregation methodology as it applies to settlement, to avoid double counting of customers who are supplied by Third Party Suppliers but whose Suppliers are not compliant with existing Settlement reconciliation methods.

As part of the derogation process, Elexon established that a proving test would be required to ensure that the aggregate data submitted into settlement from the aggregation system as well as the opted out customers totals the consumption at the site boundary. If the two values are not equal then an adjustment should be applied to ensure Settlement remains accurate.

The test has been formulated to be proportionate to the risk that errors on the sites pose to settlement overall, and the limited nature of the derogation.

The sites are still subject to BSC Audit arrangements for BSC obligations that have not been derogated, and the Party and their Agents must be satisfied that ongoing metering arrangements are compliant.

2. Restrictions

The requirements for this test need to consider that the BSC Party responsible for the site's boundary meter does not have any rights to access the meters of customers Supplied by Third Party Suppliers. Nor should they interrupt the Supply of electricity to these customers (or their own) for the purposes of the test. This means that obtaining data via conventional means is not practical for the test.

During the application process we agreed that the use of non-contact current measuring devices (i.e. current clamps or tongs) would be appropriate for measuring the consumption of customers with Third Party Supplies.

3. General

The responsibility for operating according to the BSC Derogation (or otherwise according to the BSC) is the BSC Party registered as Supplying each site. For practical reasons, we understand testing will be carried out by an agent acting on behalf of this Party. We refer to the agent carrying out the test as the 'testing organisation' in this document.

When carrying out the test, operators must have regard for normal safety and test procedures, and the testing organisation is responsible for safe working methods.

The collection of data from meters Supplied by the boundary Supplier for the site is not the subject of this proving test, and that activity is governed by non-derogated section of the BSC (primarily BSCP002). For the purposes of this test we take those values as given.

We assume each meter on site to be accurate, as they are each subject to their own test/commissioning requirements.

4. Testing requirements

The testing organisation must demonstrate that the sum of all metered volumes recorded on site and submitted into Settlement, via the Agents of the Boundary Point Supplier and any Third Party Suppliers, is equal to the metered volume recorded at the site's Boundary Meter for the same period of time.

All on-site metering accessible

Where it is possible to access all on-site meters for generation and consumption used for calculating customer bills, the testing organisation may demonstrate that aggregated instantaneous power consumption for each meter or for each feed to a meter (or some combination thereof) equals the instantaneous power consumption recorded at the boundary meter. This may be achieved by taking readings from all of the meters on the site and at the boundary meter at or close to the same time, and taking another reading at a later point in time.

We assume each meter is accurately recording energy as they are used for billing, and it is a requirement of Supply legislation that these meters are accurate. We can then assume that if the aggregate readings from on-site meters total the same as the boundary meter, the correct amount of energy would be submitted into settlement.

Alternatively, if available the testing organisation may record the known power consumption figures for a specified amount of time (for example those stored in a HMI meter register), ensuring that the aggregated values from all on-site metering is equal to the value for the same period of time at the boundary meter.

The allowable margin of error for readings must take into account CoP10 metering allowable variances (-3.5% to +2.5%) and a margin for on-site losses (as CoP10 meters must be accurate for billing but are not located at the Defined Metering Point).

We can assume that on-site meters used for billing fall in a distribution across the allowable range, and that therefore their average deviation is -0.5%. Therefore, aggregated readings from the on-site meters may deviate from the boundary meter reading by up to 3% and still be considered accurate.

The aggregated on-site meter readings should be adjusted for on-site losses using an appropriate methodology based on site configuration and size, unless the losses can be demonstrated to be negligible.

On-site metering not accessible

Where on-site metering is not accessible, the testing organisation will need to take readings from feeder cables to the meters, and be able to demonstrate that all of these feeders terminate at a meter. Details of testing will follow in an update to this document.

Specific ToR b): Emergent's experience implementing the Sandbox test

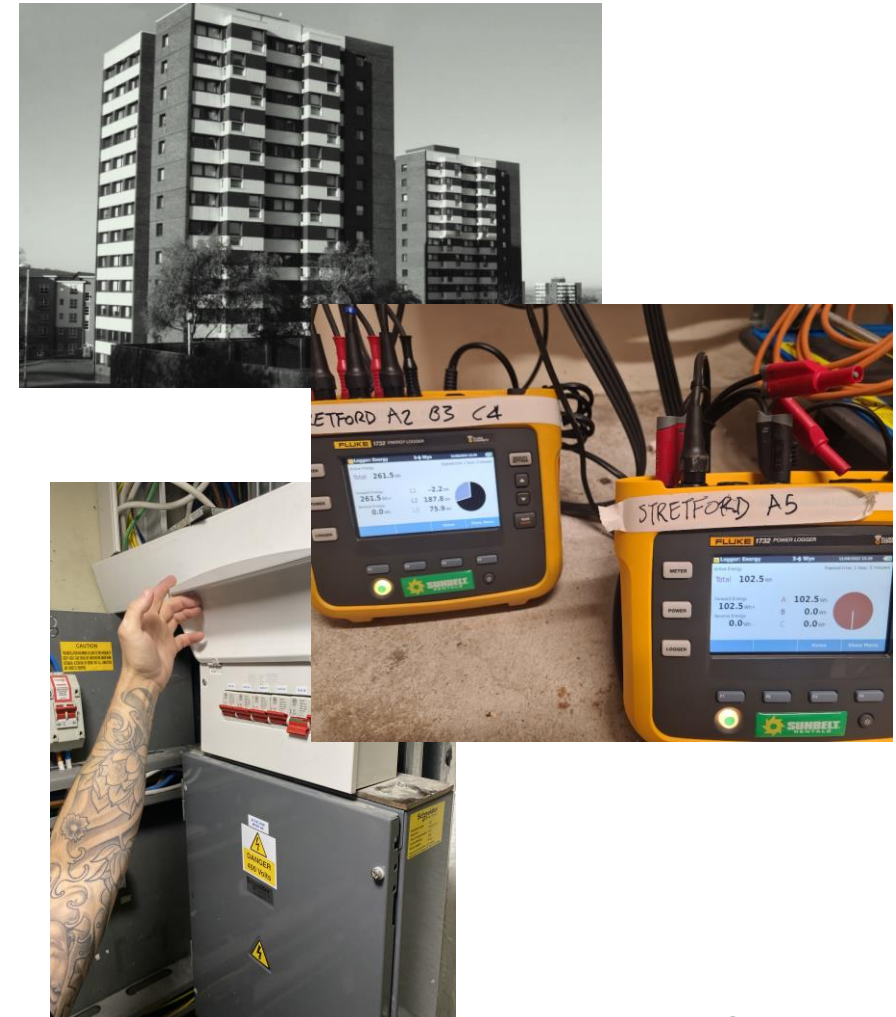


Gateshead scheme overview:

- 1 PNO across 2 tower blocks; each 12 floors
- 155 Residences
 - 108 PNO customer
 - 47 third party supplied customer, at least one on every floor. Standard meters located in meter cupboards on each floor of each block. Prepayment meters located in residences.
- 2 landlord supplies, both PNO customers, meters in landlord cupboards in tower blocks
- 1 commercial supply (mobile phone mast), third party supplied, meter in landlord cupboard
- Separate plant room contains boundary meter and generation and load metering for a CHP system

Only achieved successful test result after three (costly and disruptive) attempts:

1. With a team of c.15 people on site, we attempted manual readings with people running between meter cupboards on different floors. Extremely hard to get accurate data (i.e. bang on each half hour), and impossible to get prepayment meter data without access to residences.
2. Across all 24 meter cupboard we fitted data loggers to the tails feeding every third party supplied customer. Encountered intense logistical challenges due to amount of loggers to install and need to coordinate timing. Result was almost passable but showed v high (uncomfortable) discrepancies relative to allowable margin of error, and was rejected by Elexon.
3. Finally, (contrary to initial Elexon guidance) we disconnected power to all third party supplied customers except the commercial supply, which was data logged. We then conducted a test comparable to the standard 'complex site validation test' and got a valid result.



Specific ToR b): Why the Sandbox test is not viable in practise

- It is incoherent to apply a standard of accuracy (margin of error) requirement for a single piece of metering hardware, to a test that involves numerous manual readings and/or installation of temporary logging equipment, which are inherently less accurate
- We demonstrated it is possible to achieve the required test result if supplies to all third party supplied loads are disconnected, but is this level of such level of interference with customers proportionate to the need for the test?
- Without interrupting the supply to the third party supplied customers, it would only be possible to achieve the accuracy requirement if a new meter was installed for every third-party supplied customer, but the cost and practical challenges in doing so are the exact type of barriers to implementing third party access that P455 is trying to overcome. Why would a PNO bother?



Specific ToR b):
Difference metering does not solve unmetered loads, and nor should P455 have to.



- Elexon has argued for the test of the basis that unmetered loads would be captured under difference metering. But this is a theoretical benefit of difference metering and does not occur in practise.
- Take an example block of flats, that today has an unmetered load, prior to any plans to install a PN.
- Assume the owner of the flats decides they may be interested to install a PN.
- Upon investigation of the option, and assuming they do not intend to force residents to sign up and take advantage from their inability to switch, the owner of the flats would conclude installation of a PN is unviable because difference metering is practically ineffective at supporting third party access at this scale, as we have argued and shown repeatedly in our efforts to bring forward this code mod.
- As such, there will no change to the status quo, and the unmetered load will continue to exist. **It is not solved by difference metering.**
- Were the aggregation methodology enabled via the BSC, the PN could go ahead. This would also not alter the status quo with regards the unmetered load, delivering exactly the same outcomes as difference metering achieves today through its ineffectiveness in these types of projects.
- Essentially, there is no case for making the aggregation methodology for addressing existing unmetered loads, when surely this is the responsibility of other aspects of electricity regulation.



Specific ToR b): What testing should be required to validate the solution is correctly implemented, and should this include an unmetered load tests?

Any questions?

Can we resolve this ToR?

If not, what do we need to address?



TOR C:
IS IT RIGHT THAT THE
BOUNDARY METER HHDC
AND HHMOA ARE
RESPONSIBLE FOR
OPERATIONS RELATED
TO THE SUB-METERS,
GIVEN PRIVATE
NETWORK OPERATORS
ARE RESPONSIBLE FOR
THESE METERS ON A
DAY-TO-DAY BASIS, AND
GIVEN THE MOVE TO
NEW ARRANGEMENTS
UNDER MHHS?

Specific ToR c): Is it right that the boundary meter HHDC and HHMOA are responsible for operations related to the sub-meters, given private network operators are responsible for these meters on a day-to-day basis, and given the move to new arrangements under MHHS?



There are 2 potential arguments against this, both discounted:

1. **Potentially, PNOs could be established as a new industry role, with direct responsibility for undertaking the data (HHDC) and meter operation (HHMOA) activities.**
 - This might prove more cost efficient operationally, and avoid risks to competition from PNOs having to depend on HHDCs and HHMOAs to operate. However, creating new roles within BSC is lengthy and costly. It is essentially impossible to get this done in time for the end of Emergent's Sandbox in Sep 24. And anyway, at this early stage of development of the PN market it is not clear that the investment will be worth it.
2. **The HHDC role is to end with the move to MHHS, so why not build the mod for the new world?**
 - Ofgem has confirmed that P455 can progress independently of MHHS.
 - Have discussed implementation of the mod with the MHHS team, who confirmed, based on the planned timings for the mod, it will be possible to deliver the mod in the current world, and then use the existing industry processes to transfer over to new world. To support this process, it was agreed that the code changes for old and new world would be drafted at the same time and sent to panel when the code mod is reviewed.
 - It was similarly agreed this approach would be taken within the REC mod that is required alongside the BSC mod (because governance for the HHMOA role is now within REC). NB, we are waiting for an analyst from REC to be appointed to advance work on the change.

On the next slides, Elexon has prepared analysis on the responsibilities of the HHDC and HHMOA to assist discussion by the WG. Elexon have confirmed there is nothing in the BSC that prevents an HHDC/MOA sub-contracting delivery of their responsibilities, and doing so is fairly common.

Roles and Responsibility of a HHMOA

- The Meter Operator is responsible for installing and maintaining electricity meters on behalf of Suppliers operating in the SVA market in accordance with the BSC rules.
- The principal functions of a Meter Operator Agent for an Asset Metering System shall be to install, commission, test, maintain, rectify faults and provide a sealing service in respect of Metering Equipment (including if applicable associated Communications Equipment), in accordance with the relevant BSC Procedures and Codes of Practice.
- The Registrant of each Asset Metering System shall comply with or (as appropriate) procure that the relevant Meter Operator Agent complies with the requirements of the relevant BSC Procedures.
- All Metering Equipment and Asset Metering Equipment must comply with or exceed the requirements set out in the applicable Code of Practice. Where no applicable Code of Practice exists, then the requirements of the Act apply. A Metering Dispensation can relieve any or all of these requirements. A Registrant can apply to the BSC Panel for a Metering Dispensation if, for financial reasons or reasons of practicality, any or all of these requirements will not be met. The Panel will consult with specified Parties in deciding whether to grant a Metering Dispensation. The Panel can also, of its own initiative (and after consultation with Parties), establish Metering Dispensations from the requirements of a Code of Practice. BSCP32 sets out detailed processes covering Metering Dispensations.

Roles and Responsibility of a HHDC

- The Data Collector is responsible for collecting data from metering systems to determine the electricity consumption in accordance with the BSC rules.
- HHDCs are responsible principally for collecting and validating Metered Data and providing SVA Metering System data to the relevant Data Aggregators.
- The HHDC shall perform the responsibilities and obligations set out in the Party Agent Service Line PSL100 and this BSC Procedure for a SVA MS for all Settlement Days for which the HHDC is appointed by the Supplier in a SMRS.
- The HHDC shall use Qualified systems and processes so approved in accordance with BSCP537 in carrying out the collection of data from SVA Metering Equipment.
- The HHDC shall ensure that its systems and processes so approved in accordance with BSCP537 used for the purposes of collecting data have protocols for every Meter type for which it is responsible for data retrieval. This obligation excludes Meter types which are compliant with the Smart Metering Equipment Technical Specifications (SMETS) and from which Half Hourly data is retrieved, or sourced, by the Supplier.

Roles and Responsibility of a HHDC

- The principal functions of a HHDC are defined in S2.3.1 as:
 - (a) to collect metered data;
 - (b) to validate data and provide reports;
 - (c) to enter validated metered data into the relevant data collection system;
 - (d) to maintain relevant standing data;
 - (e) to undertake Meter Advance Reconciliation to reconcile half hourly energy values with meter advances;
 - (f) to sum register level data to produce SVA Metering System level data;
 - (g) to provide SVA Metering System level data to the relevant Half Hourly Data Aggregator; and
 - (h) to provide validated metered data and SVA Metering System reports to the relevant Supplier and the relevant Distribution System Operator.

Specific ToR c) Is it right that the boundary meter HHDC and HHMOA are responsible for operations related to the sub-meters, given private network operators are responsible for these meters on a day-to-day basis, and given the move to new arrangements under MHHS?



Any questions?

Can we resolve this ToR?

If not, what do we need to address?

TOR E:

SHOULD THERE BE A REQUIREMENT FOR ELEXON TO MAINTAIN A CENTRAL DATABASE OF SITES WHERE ON-SITE AGGREGATION IS APPLIED? DO THE BENEFITS OF MAINTAINING A CENTRAL REGISTER OUTWEIGH THE COSTS OF CREATING AND MAINTAINING HIS CENTRAL REGISTER? DO PNOS/DNOS HAVE ALL THE NECESSARY DATA TO MANAGE SCHEMES?

TOR G:

IS THIS PROPOSAL INDEPENDENT FROM ANY DCUSA CHANGE?



Specific ToR e) and g), updates

ToR e

- Have identified need for a data solution for industry to know with confidence which third party supplied meters are associated with which boundary meters (and DNO intakes). DNOs do appear to have the data associating intakes with MPANs, but not generally accessible, and may be issues with accuracy. This may lend strength to the argument for some kind of centralised database of schemes.

ToR g

- The general view at Electralink is that the BSC mod can be implemented without requiring changes to DCUSA. This is because DCUSA essentially doesn't have a functioning solution for allocating fixed charges on PNS that have third party supply.



NEXT STEPS

Progression plan

Event	Date
Present IWA to Panel	8 June 2023
Workgroup meeting 1 – Background and introduction to the process. Why is a new solution needed?	12 September 2023
Workgroup meeting 2 – Does the new solution work? Evidence from Emergent’s Sandbox	31 October 2023
Workgroup meeting 3-4 – How will the solution work in detail?	November 2023
Workgroup meeting 5 – Legal text changes	November 2023
Assessment Procedure Consultation (15 WDs)	5 December 2023 – 29 December 2023
Workgroup meeting 6	January 2024
Present Assessment Report to Panel	11 January 2023
Report Phase Consultation	15 January 2024 – 30 January 2024
Present Draft Modification Report to Panel	February 2024
Issue Final Modification Report to Authority	February 2024

MEETING CLOSE

ELEXON

THANK YOU

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13 October 2023